

Fig. 1

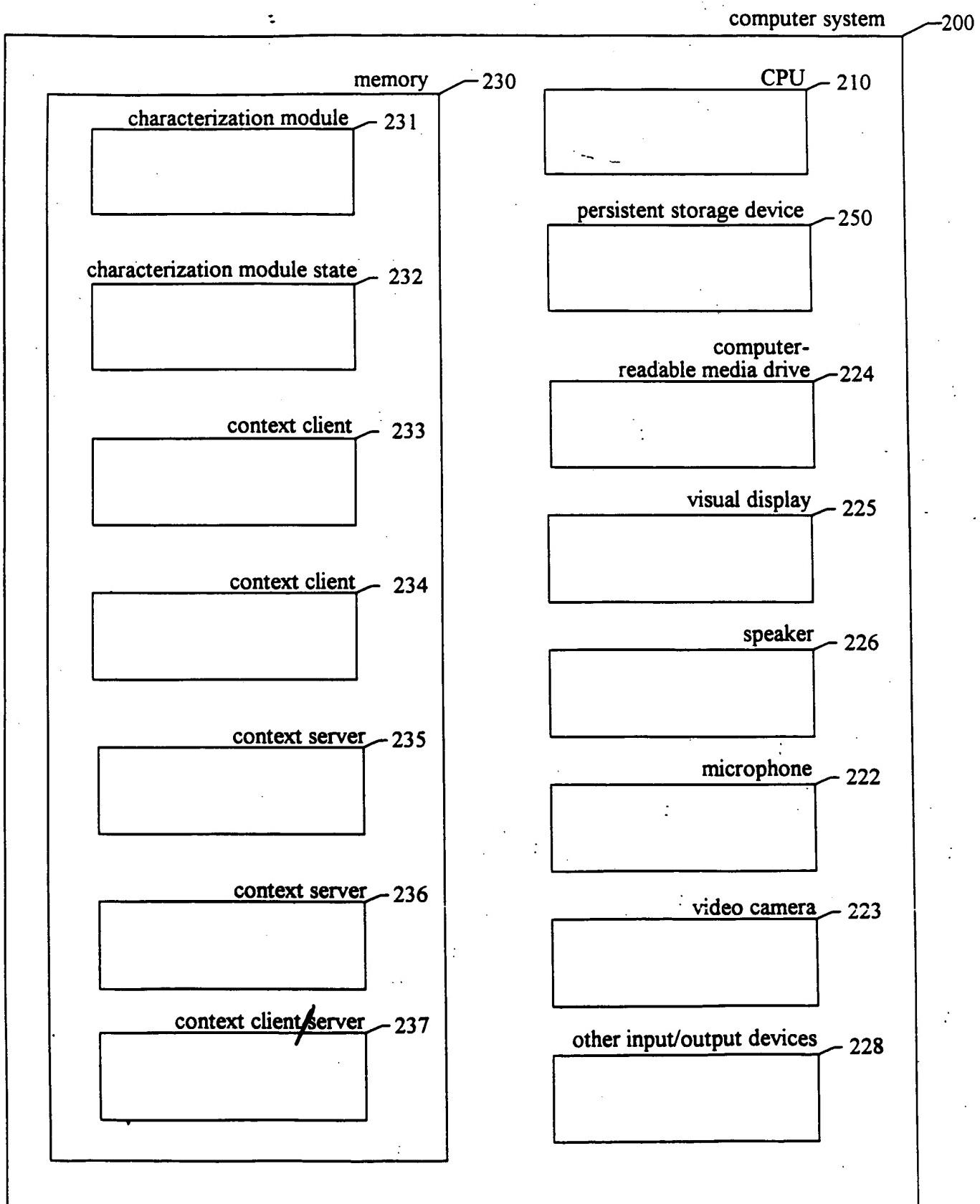


Fig. 2

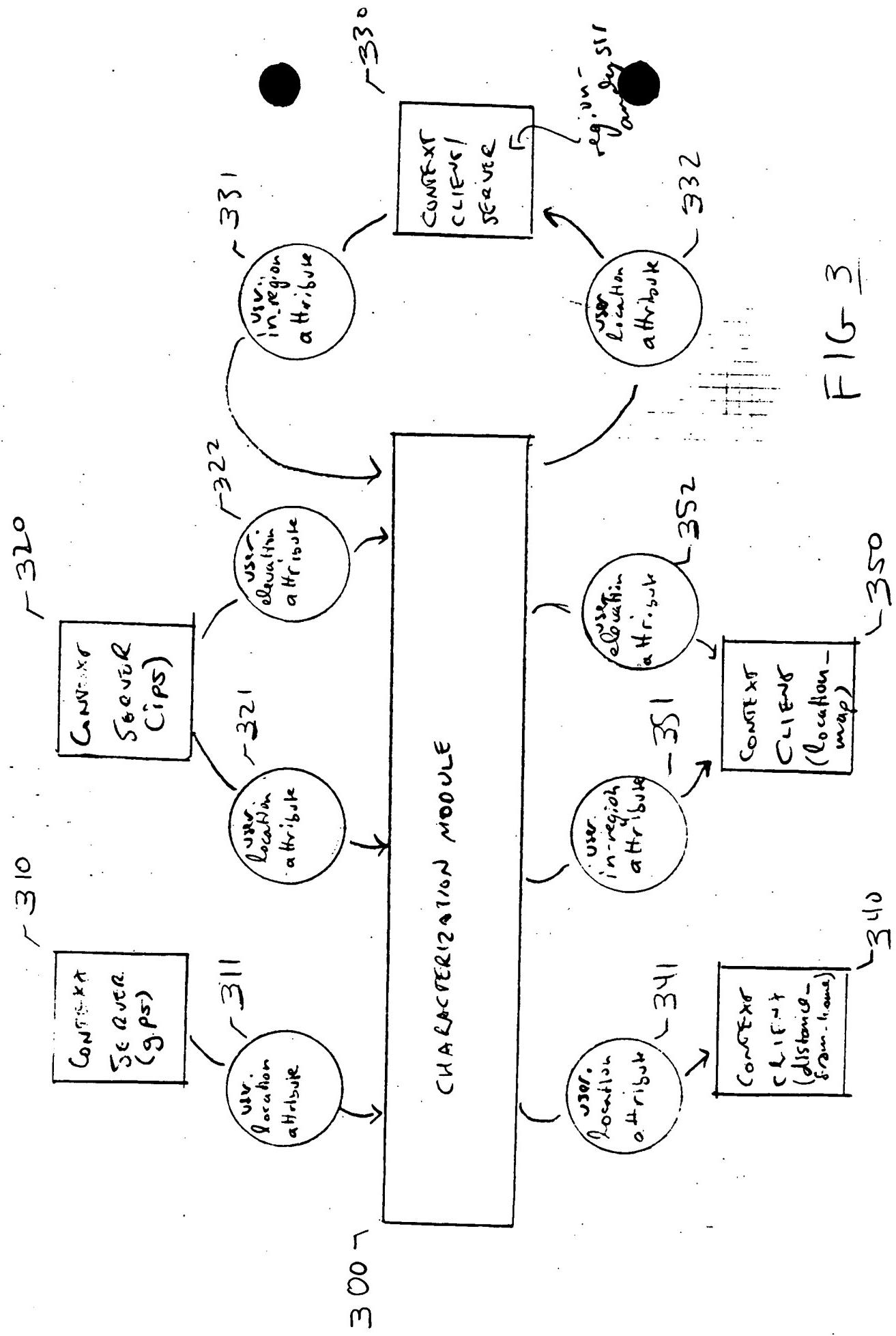


FIG 3

Digitized by srujanika@gmail.com

403

context server name	version	installation date	filename	request handler
gps	1	2/10/2000	gps.exe	(reference)
ips	1	2/21/2000	ips.exe	(reference)
location_region_analysis	1	2/10/2000	l r a.exe	(reference)

415

414

FIG 4

412

411

413

context server table

attribute name	context server name	value	uncertainty	timestamp	units	number of context clients consuming
user.location	gps	47° 38' 73" N, 122° 18' 43" W	0°.09'	13:11:04.023 2/22/2000	degrees/minutes	2
user.location	ips	47° 38' 745" N, 122° 18' 424" W	0°.021'	13:11:01.118 2/22/2000	degrees/minutes	2
user.elevation	ips	22	.5	13:11:01.118 2/22/2000	meters	1
user.in_region	location_region_analysis	none	none	none	none	0

516 515 514 513

511

517

516 515 514 513

517

518

519

516 515 514 513

517

518

519

516 515 514 513

517

-600

context client table		message handler	
location map	(reference)		
distance from home	(reference)		
region analysis	(reference)		

-611

FIG 6

attribute instance table / 760

attribute name	context server name	value	uncertainty	timestamp	units	number of context clients consuming
user.location	gps	47° 38.73' N, 122° 18.43' W	0° .09'	13:11:04.023 2/22/2000	degrees/minutes	2
user.location	ips	47° 38.745' N, 122° 18.424' W	0° .021'	13:11:01.118 2/22/2000	degrees/minutes	2
user.elevation	ips	22	.5	13:11:01.118 2/22/2000	meters	1
user.in_region	location_region_analysis	none	none	none	none	1

-711

FIG 7

-712

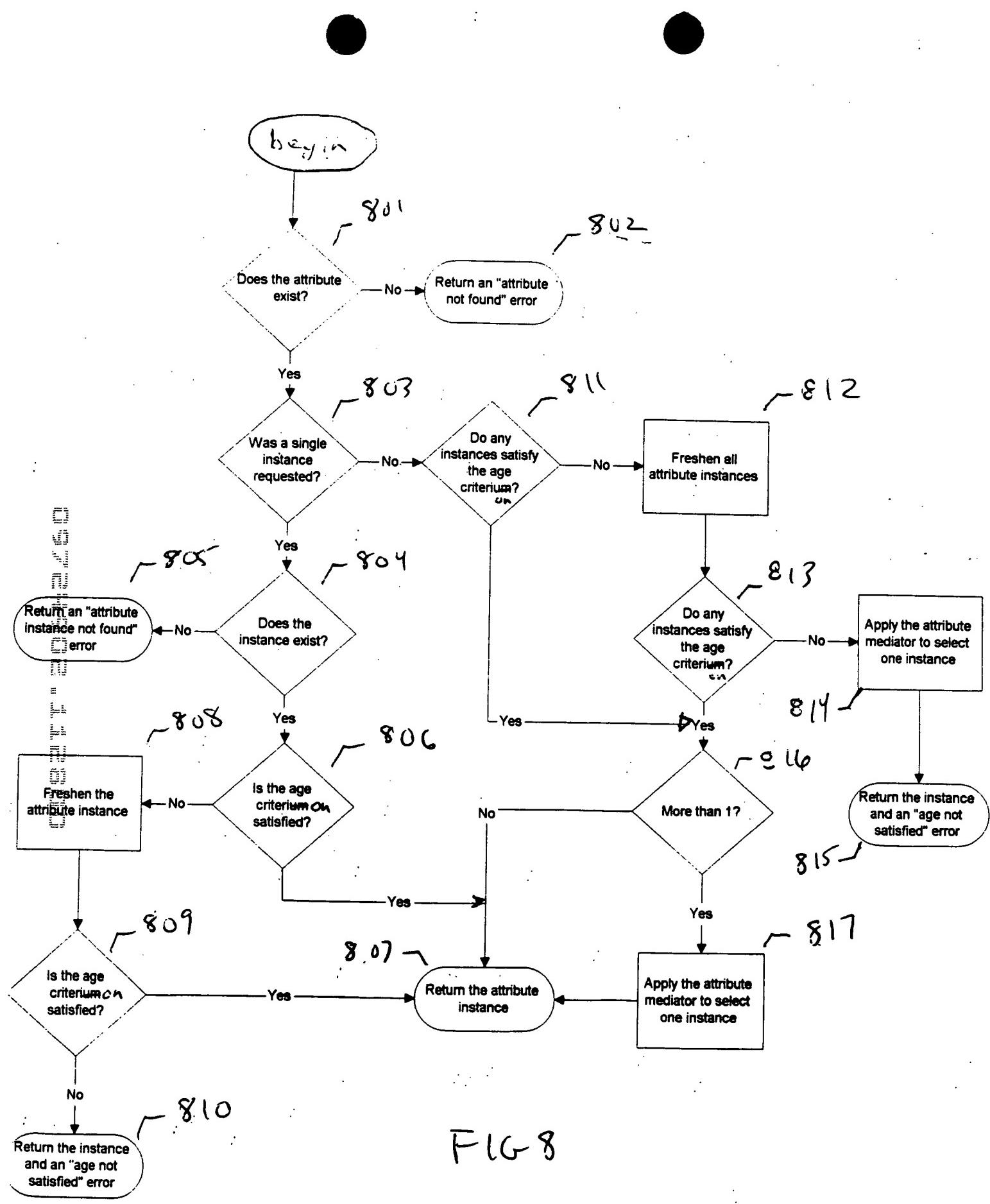
-713

-714

-715

-716

-717



Digitized by srujanika@gmail.com

900

attribute instance table

attribute name	context server name	value	uncertainty	timestamp	units	number of context clients consuming
user.location	gps	47° 38.73' N, 122° 18.43' W	0° .09'	13:11:04.023 2/22/2000	degrees/minutes	2
user.location	ips	47° 38.745' N, 122° 18.424' W	0° .021'	13:11:01.118 2/22/2000	degrees/minutes	2
user.elevation	ips	22.25	.5	13:11:06.565 2/22/2000	meters	1
user.in.region	region.analysis	none	none	none	none	1

901 ↘ 911 ↘ 912 ↘ 913 ↘ 914 ↘ 915 ↘ 916 ↘ 917

FIG 9

900

condition table

condition name	context client name	first logical parameter	second logical parameter	comparison value	logical operator
in.region.true	region.analysis	user.in.region	none	TRUE	=

1001 ↘ 1011 ↘ 1012 ↘ 1013 ↘ 1014 ↘ 1015 ↘ 1016 ↘ 1017

FIG 10

Condition monitor table

100
condition monitor table

condition monitor name	context client name	condition name	behavior	frequency	condition last evaluated	trigger handler reference	stopped
region_boundary_crossed	region_analysis	in_region_true	TRUE or FALSE	30	13:11:29.101 2/22/2000	(reference)	no
101	101	101	101	101	101	101	101

FIG 11

100
condition monitor table

condition monitor name	context client name	condition name	behavior	frequency	condition last evaluated	trigger handler reference	stopped
region_boundary_crossed	region_analysis	in_region_true	TRUE or FALSE	30	13:11:59.101 2/22/2000	(reference)	yes
101	101	101	101	101	101	101	101

101

101

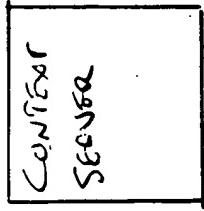
120
condition monitor table

condition monitor name	context client name	condition name	behavior	frequency	condition last evaluated	trigger handler reference	stopped
region_boundary_crossed	region_analysis	in_region_true	TRUE or FALSE	30	13:11:59.101 2/22/2000	(reference)	yes
120	120	120	120	120	120	120	120

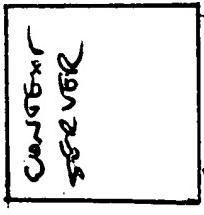
FIG 12

000000000000000000000000

✓1310



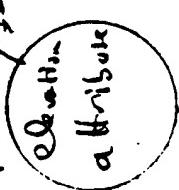
✓1320



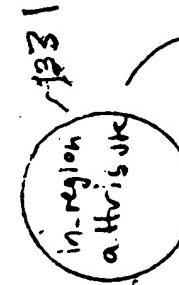
✓1311



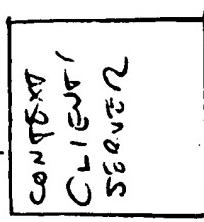
✓1321



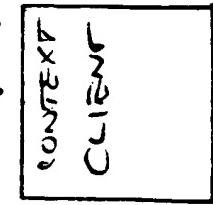
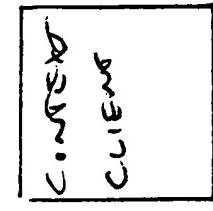
✓1322



✓1330



✓1331



✓1340

✓1350

F 16-13

attribute request table

attribute name	context client name
user.location	distance_from_home
user.in_region	location_map
user.location [gps]	location_region_analysis
user.elevation	location_map

Figure 14

1411

1412

User.

Desired_privacy_level
Interruptibility
Speed
Direction
Acceleration
Availability.
 Cognitive_availability
 Tactile_availability
 Manual_availability
 Visual_availability
 Oral_availability
 Auditory_availability
Proximity.<Item or place name>

Mood.

Happiness
Sadness
Anger
Frustration
Confusion

Activity.

Driving
Eating
Running
Sleeping
Talking
Typing
Walking

Location.

Place_name
Latitude
Longitude
Altitude
Room
Floor
Building
Address
Street
City
County
State
Country
Postal_Code

Destination. (same as User.Location.)

Physiology.

Pulse
Body_temperature
Blood_pressure
Respiration

Person.<name or ID>. (same as User.)

Platform.

UI.

Oral_input_device_availability
Manual_input_device_availability
Tactile_output_device_availability
Visual_output_device_availability
Auditory_output_device_availability

Platform. (continued)

CPU.
 Load
 Speed
Memory.
 Total_capacity
 Used

Storage.
 Total_capacity
 Used

Connectivity.
 Connection_status
 Connection_speed
 Connection_type/device
 Connection_activity

Power.
 Power_source
 Power_level

Environment.

People.

Nearest
Number_present
Number_close

Local.

Time
Date
Temperature
Pressure
Wind_speed
Wind_direction
Absolute_humidity
High_forecast_temperature
Low_forecast_temperature
People_present
Ambient_noise_level
Ambient_light_level
Days.<previous or future>
 High_temperature
 Low_temperature
 Precipitation_type
 Precipitation_amount

Place.<place name>. (same as Environment.Local)

Application.

Mail.
 Available
 New_messages_waiting
 Messages_waiting_to_be_sent

Phone.

Available
In_use
On/off
Notification_mechanism
Call_incoming
Caller_ID

Sound_recorder.
 Available
 Recording

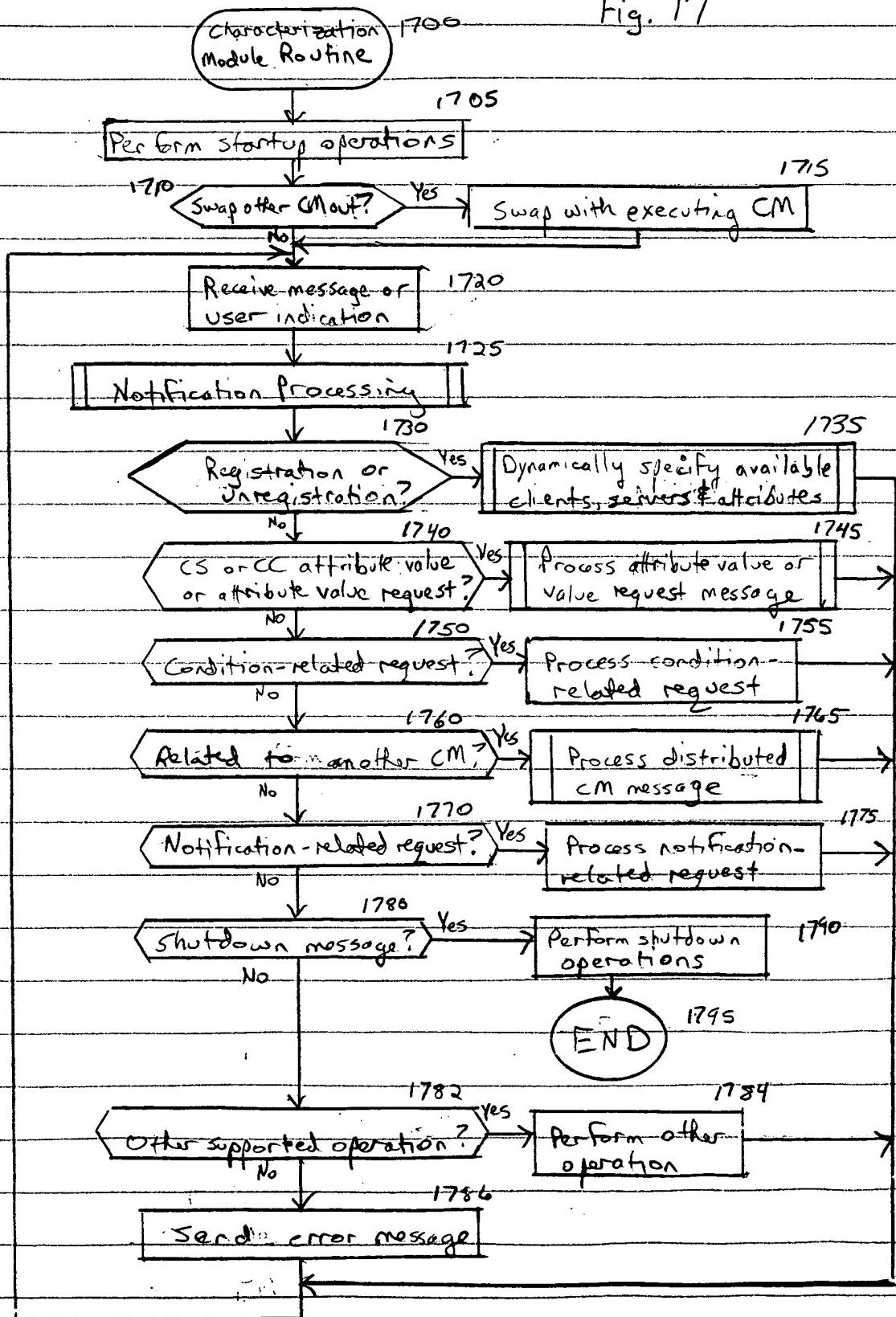
Fig. 15

- 1) User Setting
- a) Mental Context
 - i) Meaning
 - ii) Cognition
 - (1) Divided User Attention
 - (2) Task Switching
 - (3) Background Awareness
 - iii) Solitude
 - iv) Privacy
 - (1) Desired Privacy
 - (2) Perceived Privacy
 - v) Social Context
 - vi) Affect
 - b) Physical Situation
 - i) Body
 - (1) Biometrics
 - (2) Posture
 - (3) Motion
 - (4) Physical Encumbrment
 - (a) Senses
 - (i) Eyes
 - (ii) Ears
 - (iii) Tactile
 - (iv) Hands
 - (v) Nose
 - (vi) Tongue
 - (b) Workload demands/effects
 - (c) Interaction with computer devices
 - (d) Interaction with people
 - (e) Physical Health
 - ii) Environment
 - (1) Time/Space
 - (2) Objects
 - (3) Persons
 - (a) Audience/Privacy Availability
 - (i) Scope of Disclosure
 - (ii) Hardware affinity for privacy
 - (iii) Privacy Indicator for User
 - (iv) Privacy Indicator for Public
 - (v) Watching Indicator
 - (vi) Being Observed Indicator
 - (4) Ambient Interference
 - (a) Visual
 - (b) Audio
 - (c) Tactile

- 2) Computer
- a) Power
 - b) Configuration
 - i) User Input Systems
 - (1) Hand/Haptic
 - (a) Keyboard/Keystrokes
 - (2) Voice/Audio
 - (3) Eye Tracking
 - (4) Cursors
 - (a) Axis
 - (b) Resolution
 - (i) Selection
 - (ii) Invocation
 - (c) Accelerators
 - ii) Output Systems
 - (1) Visual
 - (a) Resolution
 - (2) Audio
 - (a) Public/Private
 - (3) Haptic
 - iii) External Resources
 - (1) I/O devices
 - (2) Connectivity
 - c) Data
 - i) Quantity/State
 - ii) Urgency/Importance
 - (1) Use of Prominence
 - iii) Modality
 - iv) Sensitivity/Purpose
 - (1) Privacy Issues
 - (2) Use of Association
 - (3) Use of Safety
 - v) Source/Ownership
 - (1) Types
 - (a) User generated
 - (b) Other computers or people
 - (c) Sensor
 - (d) PC State
 - (2) Use of Association

Fig. 16

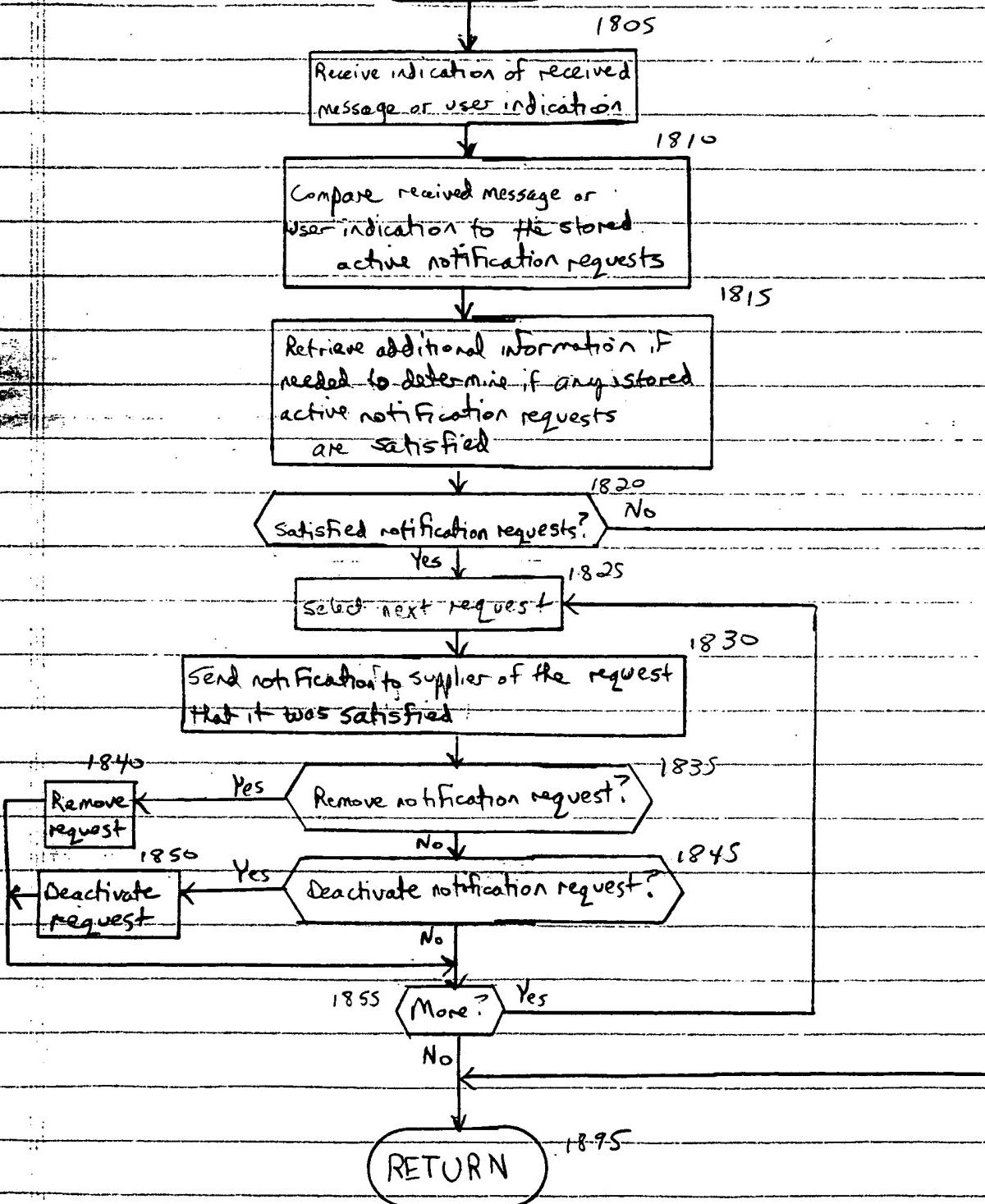
Fig. 17



Notification
processing
Subroutine

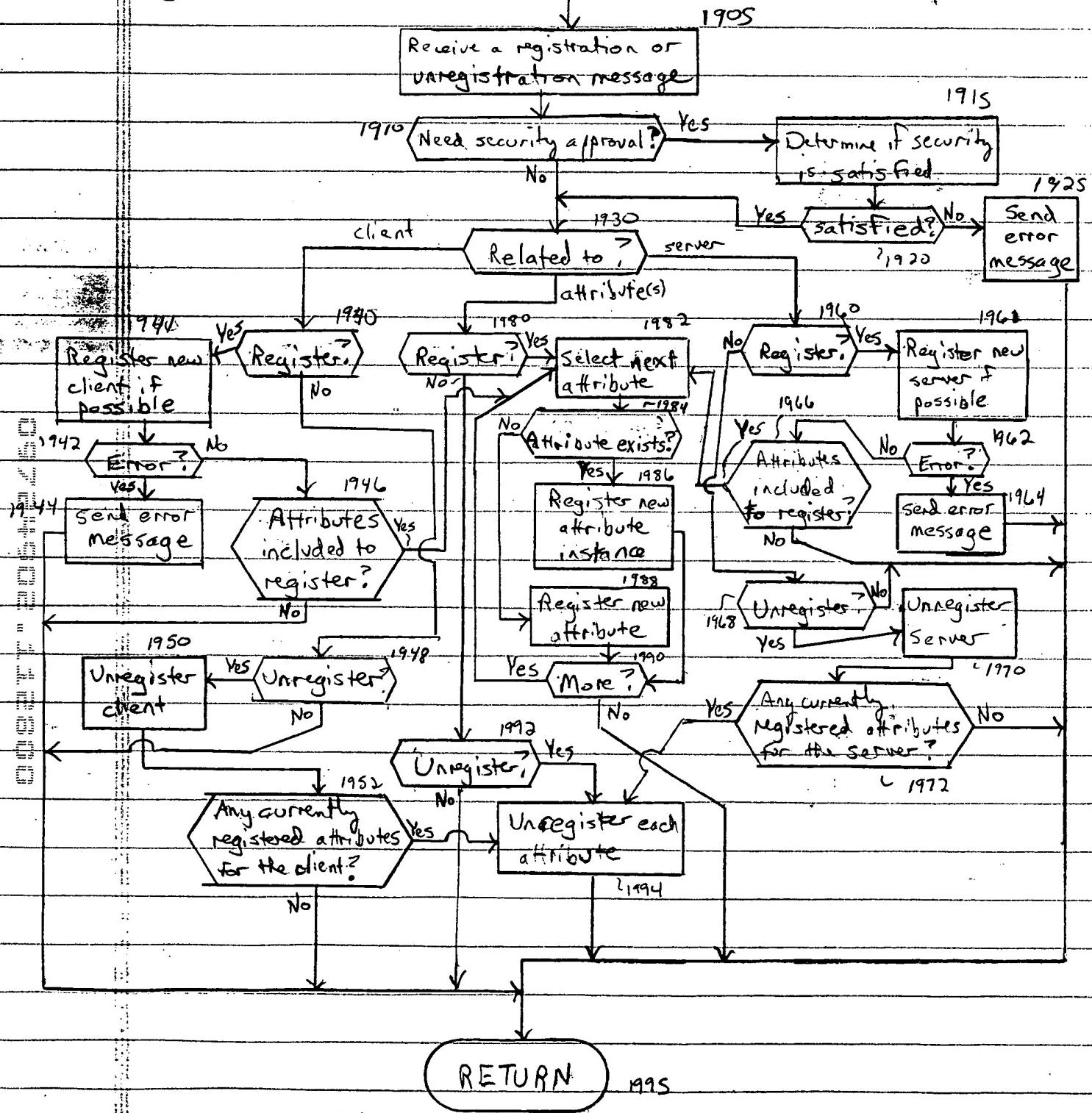
1725

Fig. 18



Dynamically Specify Available
Clients, Servers, & Attributes
Subroutine

Fig. 19



1765

Process Distributed CM Message Subroutine

Fig. 20

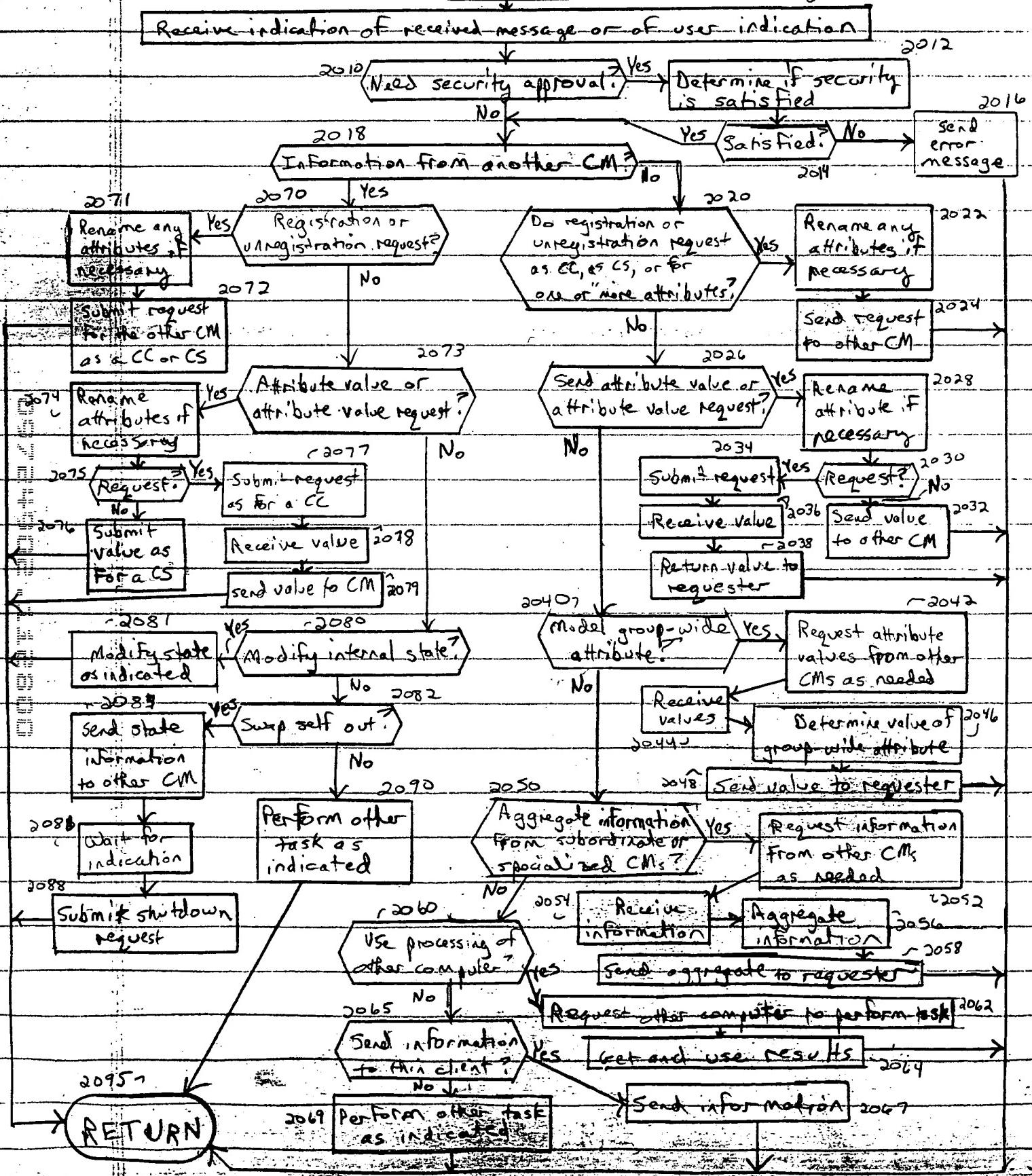


Fig. 21

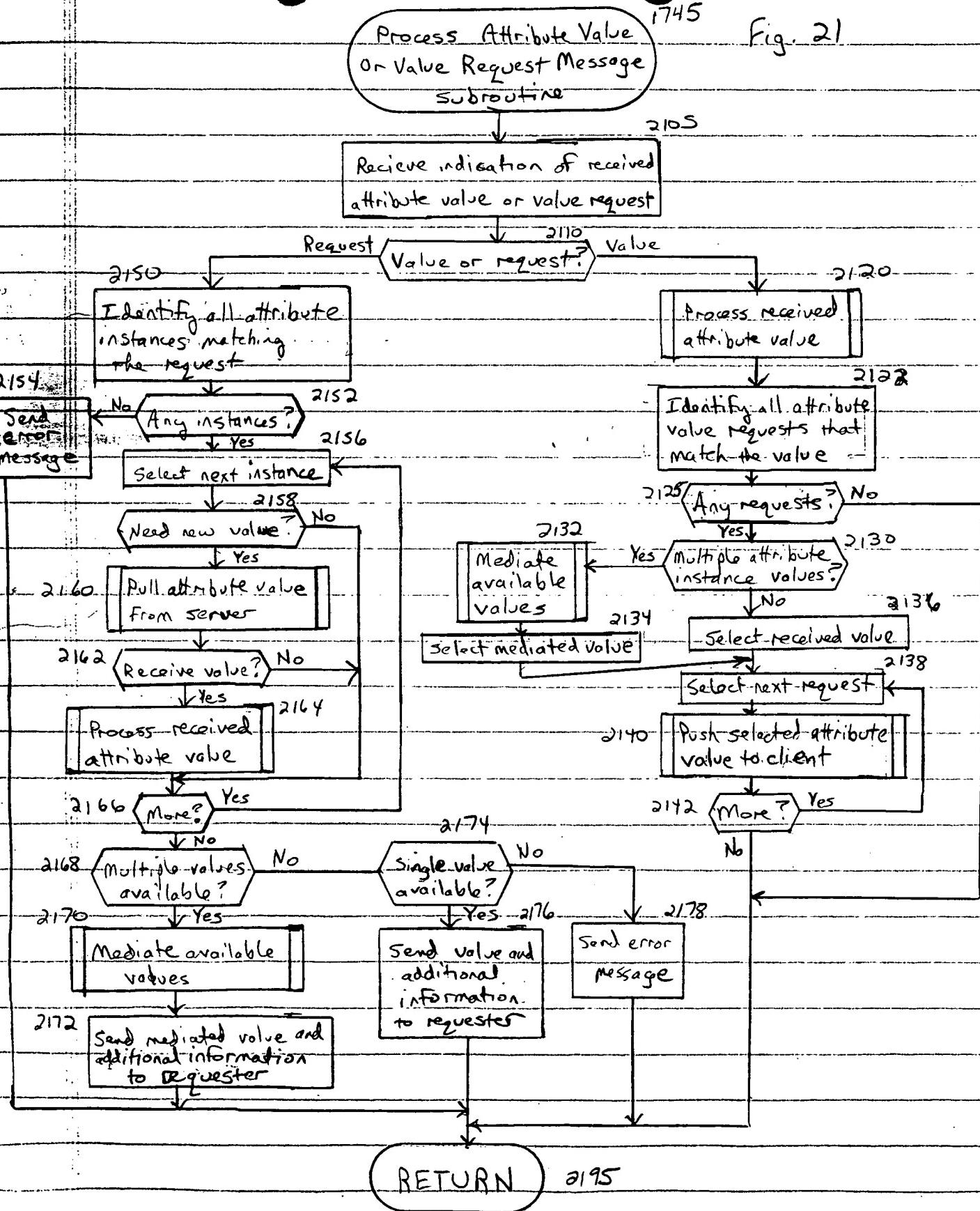


Fig 22

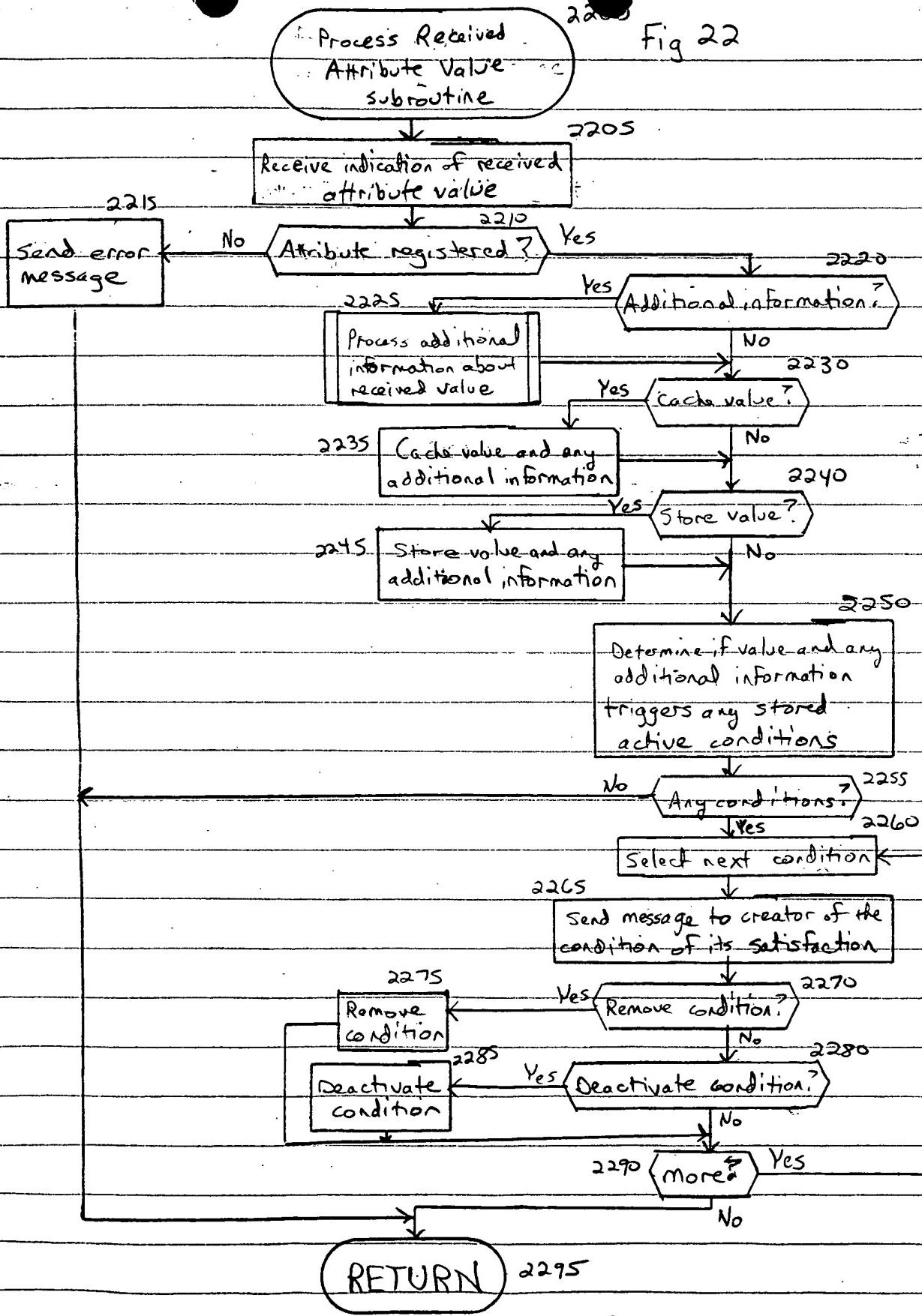


Fig. 23

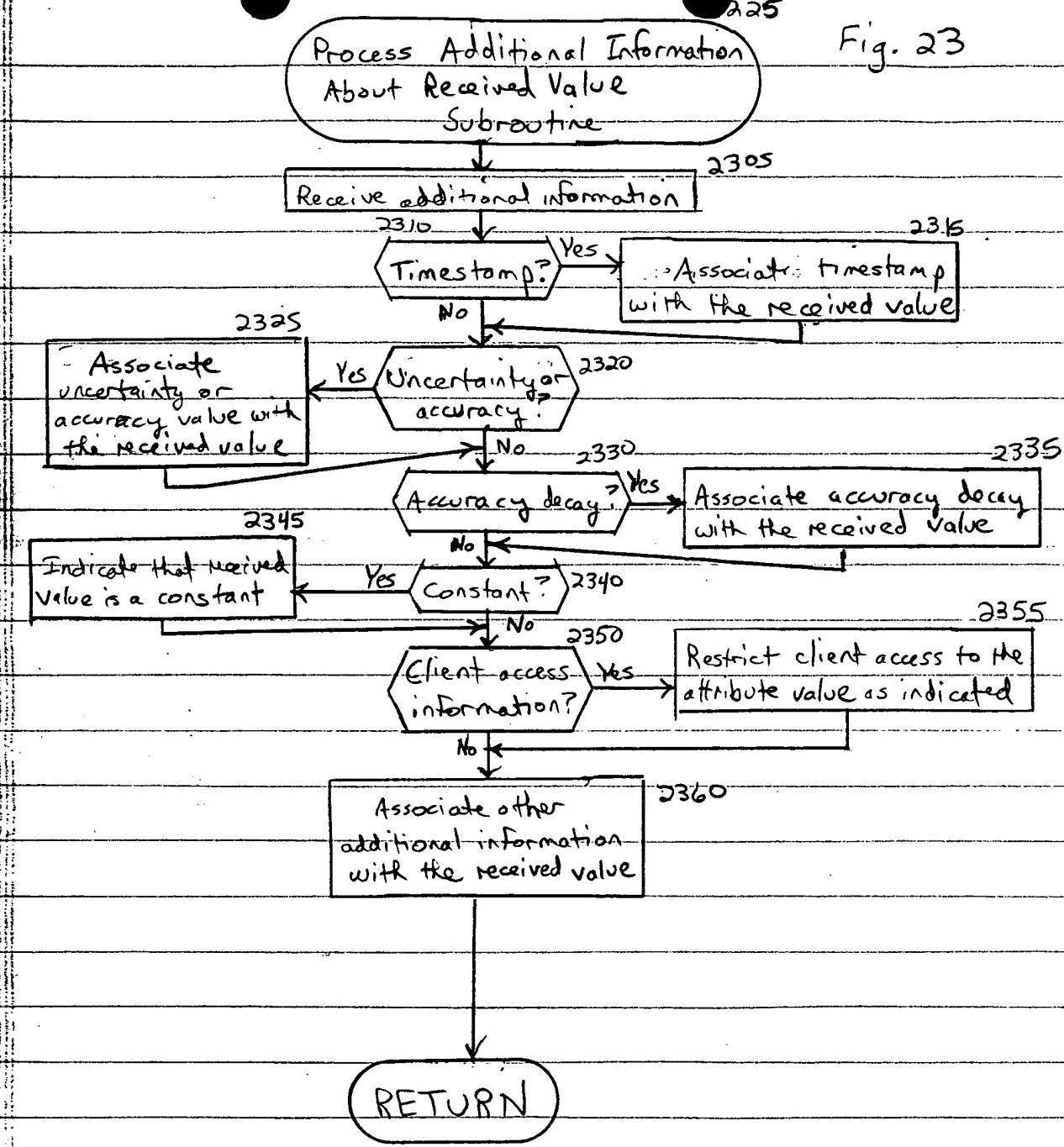
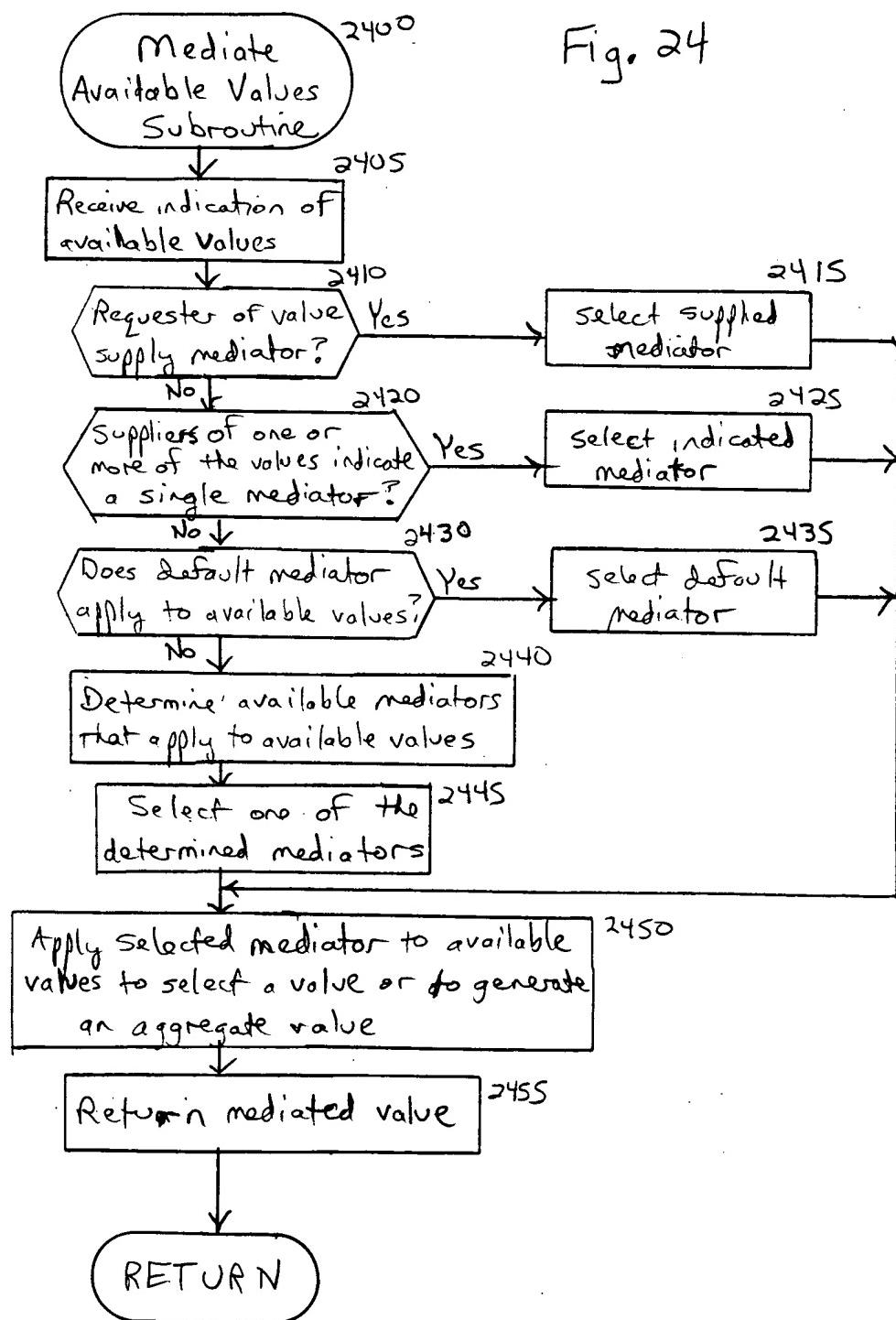


Fig. 24



097243062-212600

Fig. 25

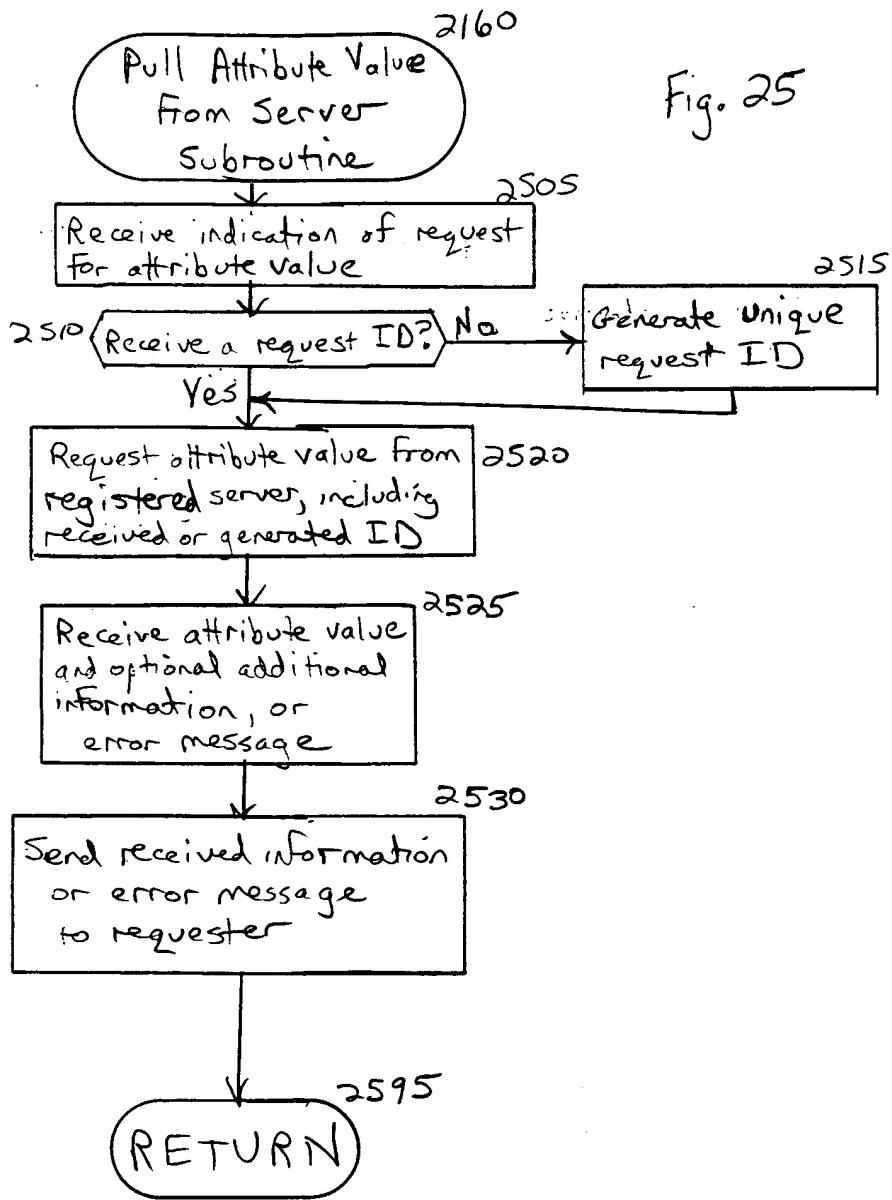


Fig. 26

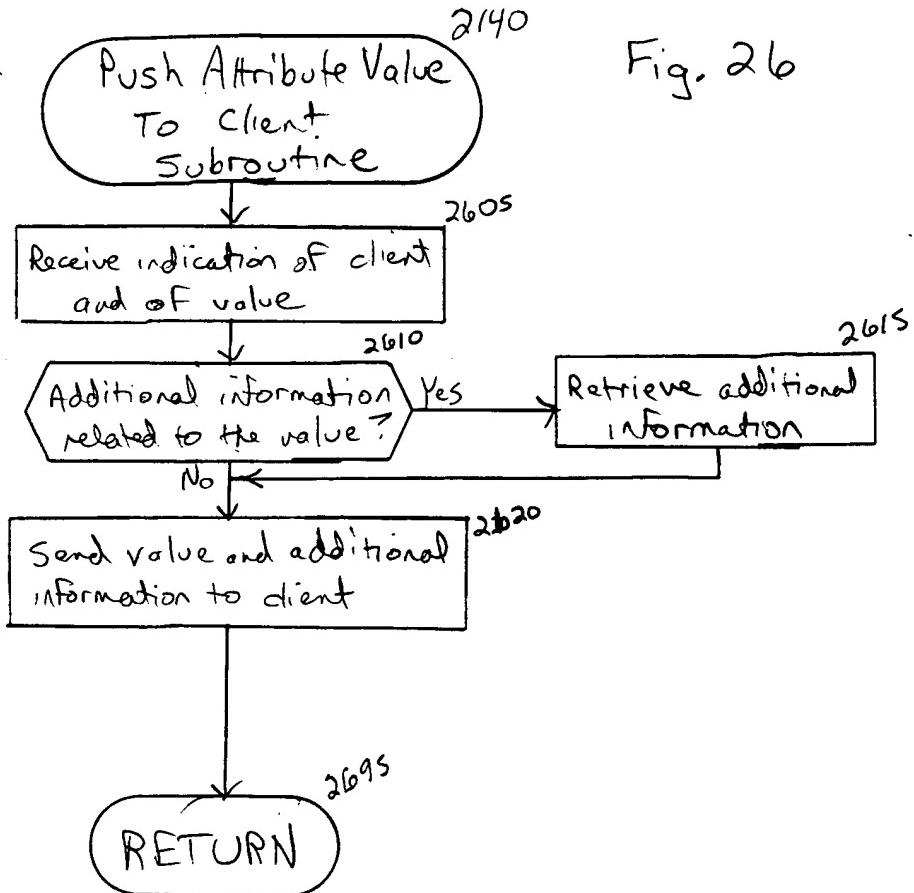
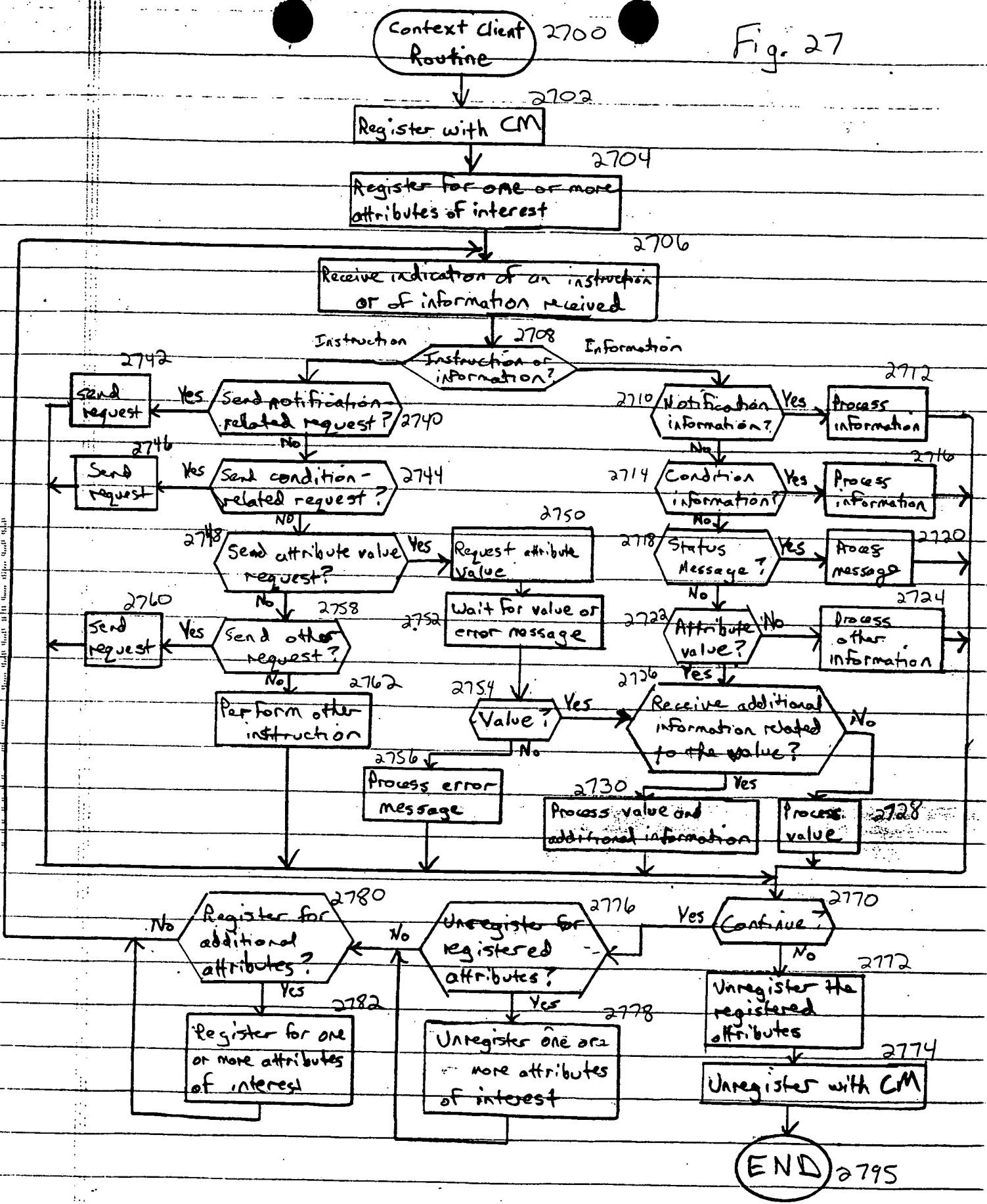


Fig. 27



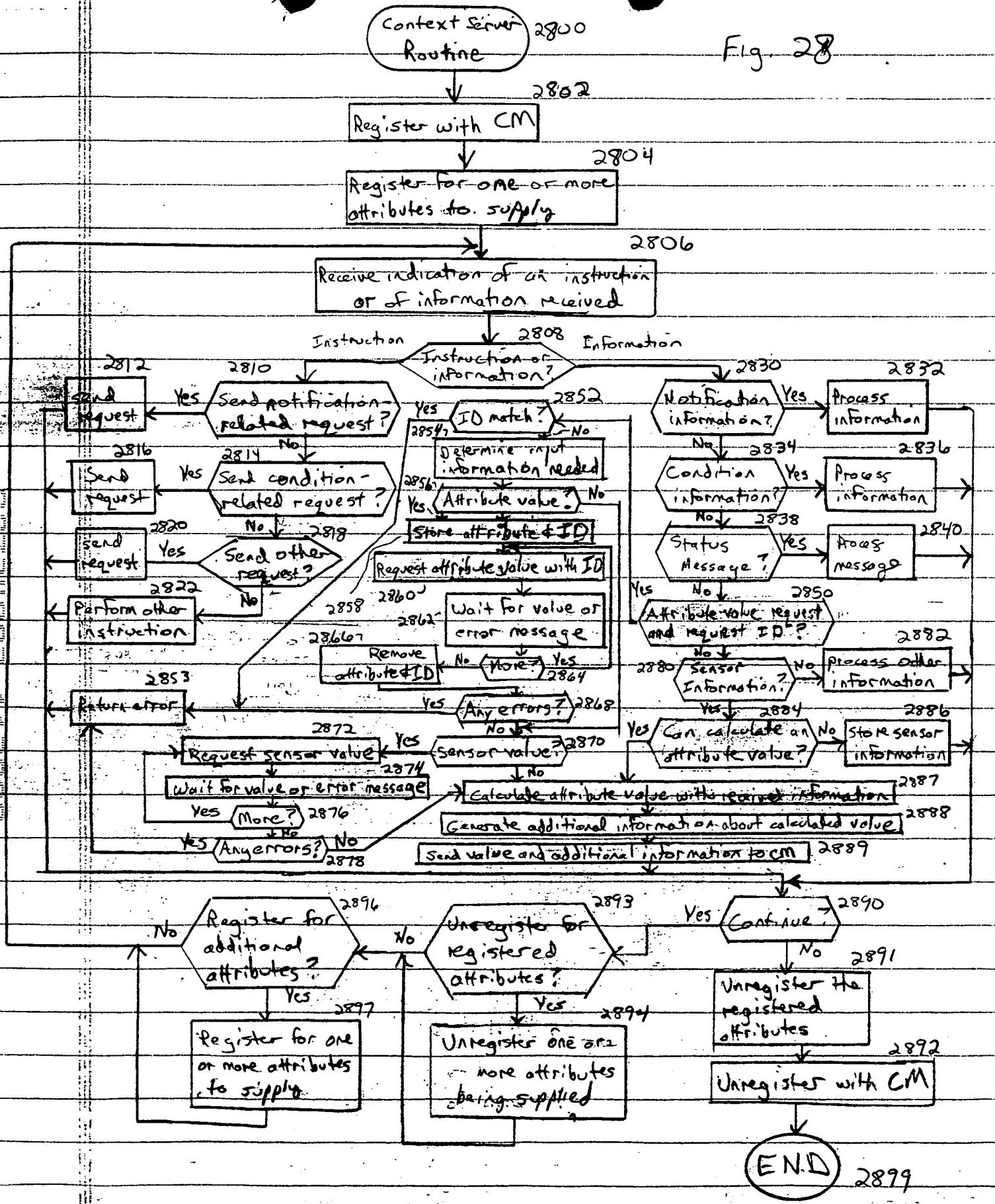


Fig. 28